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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

DZ RESERVE and CAIN MAXWELL (d/b/a
Max Martialis), individually and on behalf of
others similarly situated,

Plaintiffs,

vs.

META PLATFORMS, INC.,

Defendant.

Case No.: 3:18-cv-04978-JD

**PLAINTIFFS' OPPOSITION TO META
PLATFORM INC.'S MOTION TO EXCLUDE
THE EXPERT REPORTS AND TESTIMONY
OF GREG M. ALLENBY AND PORTIONS OF
THE EXPERT REPORTS AND TESTIMONY
OF TIMOTHY ROUGHGARDEN AND
ARMANDO LEVY**

Date: June 23, 2022
Time: 10:00 a.m.
Court: Courtroom 11, 19th Floor
Hon. James Donato

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INTRODUCTION

The Court already denied this motion. On May 6, 2021, Meta Platforms, Inc. (“Facebook”) filed a motion to exclude Dr. Allenby. (ECF No. 285). In its order on class certification, the Court properly denied that Motion. Before the Court ruled on the first motion, Facebook filed this second motion to exclude Dr. Allenby, mostly repeating its first motion and including the same factual misstatements along with a few additional meritless arguments. Accordingly, Facebook’s present motion should be summarily denied.

Facebook again boldly asserts that Dr. Greg Allenby’s opinion should be excluded because he “invented” a “brand new,” “untested” methodology for analyzing conjoint survey results. That is false. Dr. Allenby used a linear regression, a widely accepted analysis for conjoint survey data. Tellingly, Facebook studiously avoids any reference to the word “regression” in the body of its brief. Facebook also omits and distorts wholesale Dr. Allenby’s testimony and report wherein he made clear that he used a linear regression and that it has long been accepted in the conjoint field. And Facebook fails to inform the Court that its own conjoint expert Dr. David Reibstein testified that a linear regression is an appropriate methodology for the kind of data Dr. Allenby captured, and that Dr. Reibstein has endorsed in his prior publications using linear regressions for conjoint surveys.

Rather than admit these facts, Facebook misstates the record and misleads the Court. For example, Facebook claims that “Dr. Allenby admits that he has never previously used or taught this Invented Analysis methodology.” In reality, he testified exactly to the opposite:

[Q.] Now, *the regression analysis that you did* after getting the results that are reflected in table 4 *is a step that you’ve never taught your students to do; is that correct?*

A. No, no. No, that’s not correct.

Ex. 1, Allenby Dep. at 134:20–135:1 (objections omitted) (emphasis added).¹

Incredibly, after spending much of its brief attacking Dr. Allenby for using a linear regression (while studiously avoiding the word “regression”), Facebook buries an acknowledgment that linear

¹ See Court’s Standing Order for Civil Cases Before Judge Donato, ¶ 23 (“All case citations and factual statements must be completely accurate.”).

1 regressions are an accepted methodology. In short, Facebook’s feint about an “Invented Analysis” is
 2 an attempt to distract the Court from a meaningful discussion of Dr. Allenby’s work.

3 Dr. Allenby is a conjoint survey luminary who designed and conducted a conjoint survey that
 4 measures the effect of Facebook’s inflated Potential Reach numbers on advertiser demand. Plaintiffs’
 5 auction expert Dr. Timothy Roughgarden utilizes the shift in budget allocations measured by Dr.
 6 Allenby as an input to his auction simulation. Facebook does not dispute that Dr. Allenby is an expert,
 7 or that Dr. Allenby’s opinion is relevant to this case.

8 Facebook takes issue with how Dr. Allenby analyzed survey data. Under controlling law,
 9 however, these criticisms go to weight, not admissibility. And even if relevant, Facebook’s criticisms
 10 are meritless. First, Dr. Allenby used a linear regression because the logit model did not fit the data.
 11 Facebook appears to agree with that decision: It does not advocate for the logit model or dispute
 12 Dr. Allenby’s conclusion that the model did not fit the data. Second, Facebook’s criticism about Dr.
 13 Allenby using “less than half of the data” misses the point: Dr. Allenby analyzed 100% of the data
 14 that was relevant to determine the shift in Facebook budget allocations in the but-for world where
 15 Facebook did not disseminate inflated Potential Reach. Dr. Allenby’s task was not to measure the
 16 impact on Google budget allocations in a but-for world where Google made misrepresentations. Third,
 17 contrary to Facebook’s accusations of cherry-picking, Dr. Allenby excluded survey respondents using
 18 three standard bases: speeders, straight-liners, and a model-based screen.

19 Finally, Facebook accuses Dr. Allenby – without justification – of conducting a results-driven
 20 analysis in bad faith. Facebook does so in order to manufacture a direct comparison with *In re Lipitor*
 21 (*Atorvastatin Calcium*) *Marketing, Sales Practices and Products Liability Litigation (No.II)*, 892 F.3d
 22 624, 634 (4th Cir. 2018). However, in *Lipitor*, the court excluded an expert for failing to disclose the
 23 results of one of the two analyses he conducted. Here, Dr. Allenby included the results, raw data, and
 24 computer code of *both* the logit model and the linear regression model and explained why the latter is
 25 appropriate in this case. Dr. Allenby has been forthright, honest, and transparent.²

26
 27 ² Facebook asserts in its introduction that Dr. Allenby’s conjoint survey “does not prove that
 28 Plaintiffs or other advertisers were harmed” because he supposedly found advertisers (1) do not rely
 on Potential Reach being described as “people” instead of “accounts” and (2) over 21% of
 advertisers allocated more budget to Facebook when shown lower Potential Reach numbers. Mot. at

FACTUAL BACKGROUND

“Conjoint analysis is a marketing research technique used to predict changes in the demand for products when product features change.” Ex. 2, Allenby Rpt. at 4. Here, Dr. Allenby designed and conducted a conjoint survey that measures the effect of Facebook’s inflated Potential Reach numbers on advertiser demand. *Id.* (Dr. Allenby “designed and conducted a conjoint analysis . . . to determine the effect of (a) a 10% minimum artificial increase in the value of the estimated Potential Reach after targeting and (b) representing that that estimated United States Potential Reach is 240,000,000 people rather than 180,000,000 people [a 33.3% artificial increase] on the demand for Facebook advertisements.”); *see also* Ex. 3, Allenby Reply Report.

Dr. Allenby’s conjoint survey employed choice-based allocation tasks to determine how survey respondents allocate their advertising campaign budgets across Facebook, Google, and elsewhere³ in response to changes in platform features. Ex. 2 at 7–11. Allocation tasks are a well-established conjoint survey method. *See* Ex. 4, Bryan Orme book, at 167–68 (*Getting Started with Conjoint Analysis* glossary); *see also* Ex. Ex. 5, Reibstein Dep., at 74:10–13 (acknowledging he is also familiar with allocation conjoints). And, Dr. Allenby has previously designed allocation conjoints. Ex. 1 at 112:7–113:4. Dr. Allenby’s conjoint includes the following features: brand, United States audience size, estimated audience size after targeting, audience units, automatic targeting, creative guidance, expected cost per click, and expected cost per thousand impressions. Ex. 2. at 10. Each survey “respondent completed 12 allocation tasks” in which the features of the platforms varied, and the respondents “were asked to reallocate their budget based on the platform features in each of the allocation tasks.” Ex. 2 at 11. Dr. Allenby used allocation tasks because “advertisers can alter their spending on advertising platforms by changing their budget allocations instead of just making ‘buy’ or ‘no buy’ decisions.” *Id.* at 8-9.

3:1–7, 8:13–19. Facebook never mentioned this in its original *Daubert* motion and makes no attempt to develop any legal arguments around it now. Regardless, Facebook’s assertions are incorrect and irrelevant as a matter of law. *See Broomfield v. Craft Brew Alliance, Inc.*, 2018 WL 4952519, at *17–18 (N.D. Cal. Sept. 25, 2018); *In re ConAgra Foods, Inc.*, 90 F. Supp. 3d 919, 1019 (C.D. Cal. Feb. 23, 2015); *Brickman v. Fitbit, Inc.*, 2017 WL 6209307, at *5 (N.D. Cal. Dec. 8, 2017).

³ The “elsewhere” option includes “allocating budget to other social media, social influencers, other digital media, traditional media, or just decreasing the budget.” Ex. 2 at 14.

1 Prior to beginning the allocation tasks, survey respondents provided the audience size after
 2 targeting for their last campaign. For the estimated-audience-size-after-targeting feature, the allocation
 3 tasks varies the estimated audience size number from that advertiser's last campaign by 10% in each
 4 direction or provided the same audience size number as the last campaign. *Id.* at 5, 11. In each
 5 allocation task, survey respondents allocate their budget to Facebook, Google, or elsewhere, so that
 6 the total budget equals 100%. *See Ex. Id.* at 10, Figure 2.

7 To analyze the results of his conjoint survey, Dr. Allenby used a linear regression model. *Ex.*
 8 *Id.* at 11–12; *Ex. 3* at 3. The use of linear regression models to analyze the results of conjoint surveys
 9 “is well-established” in the field of marketing research. *Ex. 3* at 3. A linear regression is “standard
 10 methodology for analyzing data, and it’s present in every book on statistics.” *Ex. 1* at 143:16–18. For
 11 this linear regression model, the budget allocation to Facebook (ranging from 0% to 100%) is the
 12 dependent variable. *Ex. 2.* at 11–12.

13 Facebook’s own rebuttal expert, Dr. Reibstein, agreed that Dr. Allenby could use a linear
 14 regression to analyze his conjoint survey results. *Ex. 5* at 57:23–58:7; Reibstein Errata (correcting
 15 spelling of “logit”). This is consistent with Dr. Reibstein’s prior publication; he explained in a 2019
 16 article that a linear regression is an appropriate model for conjoints, such as Dr. Allenby’s, that have
 17 collected data with a “continuous dependent variable.” *Ex. 6*, Reibstein Dep. *Ex. 298*, at 45 n.140; *see*
 18 *also Ex. 3* at 3 (“Allocation data (such as the data I collected here) is ratio-scaled.”) and *Ex. 5* at 57:21–
 19 22 (ratio scale data is continuous data).

20 Prior to using the linear regression, Dr. Allenby analyzed the results of his conjoint survey with
 21 a logit model and found that the logit model was inappropriate because it did not fit the data: “The
 22 poor fit of the model results in unreliable estimates of the conjoint part-worths.” *Ex. 2.* at 21. Thus,
 23 the logit model “is not appropriate for the data.” *Id.* 21; *see also Ex. 1* at 276:21–23 (“the [logit] model
 24 was not a good fit for the data. The data did not fit the [logit] model.”); *accord id.* at 264:21–24, 272:1–
 25 8 (“My reason for rejecting the logit analysis . . . is due to the overall fit of the model.”) Dr. Allenby
 26 measured the logit model fit and found that the “the average in-sample fit of the [logit] model
 27 corresponds to an average choice probability of 0.42”, which is too low. *Ex. 2* at 21; *see also Ex. 1* at
 28 162:21–164:12.

1 In his report and at deposition, Dr. Allenby explained why the logit model failed to fit the data.
 2 The logit model includes an assumption known as the IIA property, or the proportional draw property.
 3 Ex. 3 at 3; Ex. 1 at 293:9–21. Under the IIA property, a gain in allocation of one brand (e.g., Facebook)
 4 comes at the expense of one of the other alternatives (e.g., Google) in *proportion* to their original
 5 allocation. *Id.* Since “Facebook and Google jointly account for the majority of [survey respondent’s
 6 original] budget allocation, this implies that a change in the allocation for Facebook should primarily
 7 come from Google.” Ex. 3 at 3. But that did not happen. *Id.*; Ex. 1 at 293:9–21. In short, because the
 8 survey respondents were not primarily trading off their budget allocations between Facebook and
 9 Google, the logit model did not work. Based on these survey responses, Dr. Allenby found “that
 10 Facebook and Google are not close substitutes.” Ex. 2 at 21; *see also* Ex. 3 at 3. Thus, Dr. Allenby
 11 concluded that it would be wrong to use the logit model.

12 Dr. Allenby found the Potential Reach inflation tested in the survey resulted in a 1.5% shift of
 13 advertisers’ overall budget allocations in Facebook’s favor.⁴ Dr. Allenby did not calculate the resulting
 14 change in price. Ex. 2 at 3 n.9. Rather, Plaintiffs’ auction expert Dr. Timothy Roughgarden took the
 15 “shift in budget allocations” measured by Dr. Allenby as an input to his Facebook auction simulation.
 16 Ex. 7, Roughgarden Rpt. ¶ 13. Dr. Roughgarden opines “in the but-for world,” “Facebook
 17 Advertisement purchasers would have paid prices that were 3.4% lower than in the as-is world with
 18 the Conjoint-Tested Potential Reach Misrepresentations.” *Id.* ¶ 19.

19 PROCEDURAL BACKGROUND

20 Facebook first moved to exclude Dr. Allenby on May 6, 2021. (ECF No. 285.) While the first
 21 motion was still pending, Facebook filed this second, largely identical motion. On March 29, 2022,
 22 the Court denied the first motion. Class Cert. Order at 12:22–14:5 (ECF No. 388.)

23 LEGAL STANDARD

24 Federal Rule of Evidence 702 governs the admissibility of expert witnesses. The district court
 25 must ensure that the witness is “qualified” and that “admitted testimony is both relevant and reliable.”

26
 27 ⁴ Because survey respondents’ initial Facebook budget allocations are less than 50% of their total
 28 advertisement budgets, the 1.5% shift in advertisers’ overall budgets towards Facebook is more than
 a 3% increase in their budgets for Facebook advertisements.

1 *Wendell v. GlaxoSmithKline LLC*, 858 F.3d 1227, 1232 (9th Cir. 2017). For the qualification prong,
 2 the expert may be qualified based on “knowledge, skill, experience, training, or education.” Fed. R.
 3 Evid. 702. For the relevance prong, “[r]elevance simply requires that ‘[t]he evidence ... logically
 4 advance a material aspect of the party’s case.’” *USA v. Hayes*, 2014 WL 5470496, at *2 (N.D. Cal.
 5 Oct. 21, 2014) (Donato, J.) (quoting *Estate of Barabin v. AstenJohnson, Inc.*, 740 F.3d 457, 463 (9th
 6 Cir. 2014). For the reliability prong, “[r]eliability means the proffered expert opinions and testimony
 7 have ‘a reliable basis in the knowledge and experience of the relevant discipline.’” *Id.* (quoting *Kumho*
 8 *Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 149 (1999)).

9 “[T]he rejection of expert testimony is the exception rather than the rule.” Fed. R. Evid. 702
 10 advisory committee’s note to 2000 amendment. In evaluating expert testimony, “the trial court is ‘a
 11 gatekeeper, not a fact finder.’” *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1043–44 (9th
 12 Cir. 2014) (quoting *Primiano v. Cook*, 598 F.3d 558, 565 (9th Cir.2010)). The judge is “supposed to
 13 screen the jury from unreliable nonsense opinions, but not exclude opinions merely because they are
 14 impeachable.” *Alaska Rent-A-Car, Inc. v. Avis Budget Grp., Inc.*, 738 F.3d 960, 969 (9th Cir. 2013).
 15 “The district court is not tasked with deciding whether the expert is right or wrong, just whether his
 16 testimony has substance such that it would be helpful to a jury.” *Id.* at 969–70. “Challenges that go to
 17 the weight of the evidence are within the province of a fact finder, not a trial court judge. A district
 18 court should not make credibility determinations that are reserved for the jury.” *City of Pomona*, 750
 19 F.3d at 1044. Challenges to the conclusions are for the factfinder – not the court on a *Daubert* motion
 20 – to resolve. *USA v. Hayes*, 2014 WL 5470496, at *2 (N.D. Cal. Oct. 21, 2014) (Donato, J.) (citing
 21 *Daubert v. Merrill Dow Pharms.*, 509 U.S. 579, 595 (1993)).

22 ARGUMENT

23 I. Facebook’s Supplemental Briefing Should Be Stricken

24 The Court rejected Facebook’s previous request to exclude Dr. Allenby. Class Cert. Order at
 25 12:22–14:5. Because the Court has already ruled on the matters raised here, the Court should
 26 summarily deny Facebook’s new motion. “Nothing has changed since then, and [Facebook’s]
 27 renewed request is effectively an improper motion for reconsideration that is entirely unsupported by
 28 new facts or law.” *Milan v. Clif Bar & Co.*, 489 F. Supp. 3d 1004, 1008 (N.D. Cal. 2020) (Donato,

1 J.).

2 **II. Dr. Allenby Is a Luminary in the Conjoint Field and Qualified to Provide His Opinion**

3 Facebook does not dispute that Dr. Allenby has the requisite expertise to render his opinions,
4 nor could it. Dr. Allenby is a conjoint luminary. Dr. Allenby has a Ph.D. in Statistics and Marketing
5 has been researching conjoint analysis, publishing papers on conjoint analysis, and designing conjoint
6 surveys for numerous companies for more than 25 years. Ex. 2 at 1 nn.1–2; Allenby CV-1–12.
7 Facebook’s own conjoint expert, Dr. David Reibstein, testified that “Dr. Allenby is a conjoint expert,”
8 and he has relied extensively on Dr. Allenby’s research in both academic work and expert reports for
9 other litigation. Ex. 5 at 25:18–19, 24:14–25:21; *see e.g.*, Ex. 6 at 4 n.9, 10 n.101, 43 n.135, 44 nn.138–
10 39 (Dr. Reibstein’s paper citing five articles by Dr. Allenby).

11 **III. Dr. Allenby Uses a Reliable Conjoint Survey Methodology**

12 “Challenges to survey methodology go to the weight given the survey, not its admissibility.”
13 *Fortune Dynamic, Inc. v. Victoria’s Secret Stores Brand Management, Inc.*, 618 F.3d 1025, 1036 (9th
14 Cir. 2015) (quoting *Wendt v. Host International, Inc.*, 125 F.3d 806, 814 (9th Cir. 2006)). Survey
15 evidence should be admitted “as long as [it is] conducted according to accepted principles and [is]
16 relevant.” *Wendt*, 125 F.3d, 814. (internal quotations omitted). The Ninth Circuit has “made clear that
17 technical inadequacies in a survey, including the format of the questions or the manner in which it was
18 taken, bear on the weight of the evidence, not its admissibility.” *Fortune Dynamic, Inc.*, 618 F.3d at
19 1036 (internal citations omitted); *see also Clicks Billiards, Inc. v. Sixshooters, Inc.*, 251 F.3d 1252,
20 1263 (9th Cir. 2001) (“[I]ssues of methodology, survey design, reliability . . . critique of conclusions,
21 and the like go to the weight of the survey rather than its admissibility.”).

22 Facebook does not contest that conjoint surveys are a well-accepted methodology. And as the
23 Court recognized in ruling on Facebook’s last Motion, “This Court has found conjoint analysis to be
24 a reliable method of determining price premiums.” Class Cert. Order at 13:17–19. More than 20,000
25 such studies are conducted each year. Ex. 14, Allenby Rpt. at 6. Expert opinions based on conjoint
26 surveys are routinely accepted by federal courts as part of price premium damages models. *See e.g.*,
27 *Hadley v. Kellogg Sales Co.*, 324 F. Supp. 3d 1084, 1110 (N.D. Cal. 2018) (denying motion to exclude
28 and noting that “conjoint analysis is widely-accepted as a reliable economic tool for isolating price

1 premia”); *Price v. L’Oreal USA, Inc.*, 2018 WL 3869896, at *9 (S.D.N.Y. Aug. 15, 2018); *In re*
 2 *Whirlpool Corp. Front-Loading Washer Prod. Liab. Litig.*, 45 F. Supp. 3d 724, 753–54 (N.D. Ohio
 3 2014). Nor does Facebook challenge that allocation tasks are a well-established conjoint survey
 4 method, and a method that Dr. Allenby has previously used. *See* Ex. 4 at 167–168; Ex. 5 at 74:10–13;
 5 Ex. 1 at 112:7–113:4.

6 Because Facebook’s criticisms of Dr. Allenby go to weight and not admissibility, Facebook
 7 demeans Dr. Allenby and claims, without evidence, that Dr. Allenby engaged in “cherry-picking” and
 8 conducted a “results-driven” analysis. Mot. at 12:1–14:2. The Court already rejected these challenges.
 9 Class Cert. Order at 13:21–28. Facebook cites the Fourth Circuit’s decision in *Lipitor* to claim that the
 10 cherry-picking for which that expert was excluded “bears a striking resemblance to Dr. Allenby’s
 11 decision” to use a linear regression model rather than the logit model. Mot. at 12:12–13:5. **But, what**
 12 **the expert did in *Lipitor* is the exact opposite of what Dr. Allenby did here.** In *Lipitor*, the expert
 13 was excluded for conducting two statistical tests, only one of which supported Plaintiffs’ argument,
 14 but omitting from his report the statistical test that did not support Plaintiffs’ argument. *Lipitor*, 892
 15 F.3d at 634–35 (emphasis added). Here, unlike in *Lipitor*, Dr. Allenby included the results of both the
 16 logit model and the linear regression model in his opening report. Ex. 2 at 11–12, 18–22, Tables 3–4.
 17 And, unlike in *Lipitor*, Dr. Allenby produced with his opening report “[t]he raw data and computer
 18 code for all the models used in my analysis,” including both the logit model and linear regression
 19 model. *Id.* at 16–17.

20 Also, as the *Lipitor* court observed, “[c]hoosing the test to apply is a matter of selecting the
 21 appropriate tool for the task and involves consideration of a variety of factors.” 892 F.3d at 633–34.
 22 Dr. Allenby made those considerations. In his report, Dr. Allenby explains why he utilized the linear
 23 regression model, how he determined that the logit model did not fit (calculating the average in-sample
 24 fit of the [logit] model of 0.42), and the reasons why the logit model did not fit (IIA property was
 25 violated because survey respondents did not primarily trade-off between Facebook and Google). Ex.
 26 2. at 21–23, 11–12; Ex. 3 at 3. Dr. Allenby’s explanation means that this case is also nothing like *In*
 27 *re Incretin-Based Therapies Products Liability Litigation*, 2021 WL 880316, at *20 (S.D. Cal. Mar.
 28 9, 2021), where the Court excluded an expert’s opinion due to a “change in chosen methodology,

without explanation or mention of it in his updated report.”

**A. Dr. Allenby Used a Linear Regression to Analyze His Conjoint Survey Results—
a Standard Methodology as Acknowledged by Dr. Reibstein**

Facebook claims that Dr. Allenby used “a made-up, results-driven” “Invented Analysis” for analyzing the conjoint survey responses that was “created for this litigation,” and “is not generally accepted.” Mot. at 2:5–12. **That is false.** Dr. Allenby did not invent a new analysis for this litigation to analyze the results of his conjoint survey. Dr. Allenby utilized a linear regression – a methodology accepted in the conjoint field, by Dr. Reibstein and by courts in this District.

As the Court already ruled, “Plaintiffs have shown that Dr. Allenby chose a linear regression model that is a standard method for analyzing this data[, and] Dr. Allenby’s choice of one particular data analysis method over another goes to the weight of his opinion, not its admissibility.” Class Cert. Order at 13:21–25 (citations omitted). Linear regression is an established methodology for analyzing the results of conjoint surveys, and it was appropriate to use a linear regression here. Contrary to Facebook’s bald assertions, Mot. at 10:14–17, Dr. Allenby made this clear in his reports and at deposition. *See* Ex. 3 at 3 (the use of linear regression models to analyze the results of conjoint surveys “is well-established” in the field of marketing research); Ex. 1 at 143:16–18 (a linear regression is “standard methodology for analyzing data, and it’s present in every book on statistics.”).

Facebook’s own rebuttal expert, Dr. Reibstein, agreed that Dr. Allenby could use a linear regression to analyze the results of the conjoint survey conducted here:

Q. Would you agree – agree with me that generally if a researcher has collected data that has a continuous dependent variable, a linear regression can be used?

The Witness: Yes, a – a linear regression or in – in the case of what Dr. Allenby did, a – a logi[t] regression could be used as well, yes.

Ex. 5 at 57:23–58:7 (objections omitted); Reibstein Errata (correcting spelling of “logit”). This is consistent with Dr. Reibstein’s 2019 conjoint article, which states, “Generally if a research [*sic*] has collected data that has continuous dependent variable [*sic*] a linear regression can be used.”⁵ Ex. 6 at

⁵ In his 2019 article, Dr. Reibstein also writes that when there is a “binary dependent variable,” a “more accurate way to analyze [conjoint data] is to use a logit.” Ex. 6 at 45 n.140. “A binary variable

45 n.140. Dr. Allenby collected such continuous data in this case. Ex. 3 at 3 (“Allocation data (such as the data I collected here) is ratio-scaled.”); Ex. 5 at 57:21–22 (ratio scale data is continuous data). Facebook omits these facts from its brief.

After spending much of its brief asserting that Dr. Allenby invented a new analysis, Facebook buries in a footnote an acknowledgment that linear regressions are an accepted method. Facebook writes that it “does not take issue with the use of a linear regression to analyze survey data in general, but that is only true where experts use a methodology that meets the basic standards of *Daubert*.” Mot. at 6 n.7. That is pure doublespeak. Because the linear regression “is a reliable methodology that is well-accepted in the field” (including by Dr. Reibstein), it passes muster under *Daubert*. *Giuliano v. Sandisk Corp.*, 2015 WL 10890654, at *10 (N.D. Cal. May 14, 2015); *Fortune Dynamic, Inc.*, 618 F.3d at 1036 (“technical inadequacies in a survey . . . bear on the weight of the evidence, not its admissibility.”).

Facebook does not dispute that the logit model did not fit the data or criticize how Dr. Allenby evaluated model fit. Ex. 2. at 20–21; *see also* Ex. 1 at 142:14–143:5, 164:1–164:12. Nor does Facebook advance substantive arguments for why Dr. Allenby should have used the inappropriate logit model. Ultimately, Facebook’s true concern is that it disagrees with the conclusions of Dr. Allenby’s methodology. Of course, using *Daubert* to challenge an expert’s conclusions is improper. *USA v. Hayes*, 2014 WL 5470496, at *2 (N.D. Cal. Oct. 21, 2014) (Donato, J.) (citing *Daubert v. Merrill Dow Pharms.*, 509 U.S. 579, 595 (1993)).

Facebook incorrectly claims, “Allenby admits that he has never used or taught this Invented Analysis methodology...” Mot. at 10:15–17. **Not true.** Ex. 1 at 134:20–135:22 (Q. Now, the regression analysis that you did . . . is a step that you’ve never taught your students to do; is that correct? **A. No, no. No, that’s not correct.**) (emphasis added) (objections omitted); Ex. 1 at 137:5–7. Facebook cites to a series of questions about whether Dr. Allenby had specifically taught his

is where there are two choices. And it – it generally is coded as a zero and a one.” Ex. 5 at 56:1–6. Here, the survey participants provided responses that were non-binary, allocating their budgets anywhere from 0 % to 100% (i.e., continuously). Dr. Reibstein agreed at his deposition that the dependent variable in Dr. Allenby’s regression is not binary. *Id.* at 56:13–20.

1 students about the “step” of going from the logit model to the regression model. Mot. at 10:17 (citing
 2 Allenby Dep. at 137:15–139:6.) But, Facebook fails to include the immediately preceding pages where
 3 Dr. Allenby testified that he has taught the regression model. Ex. 1 at 134:20–135:17. Of course, there
 4 is a simple reason why Dr. Allenby does not teach his students about how to switch from the logit
 5 model to the regression model – “Teaching materials . . . usually have it in the opposite order.
 6 Regression first, logit second.” Ex. 1 at 137:5–7.

7 Facebook then incorrectly claims Dr. Allenby admitted that he was “not aware of any other
 8 expert” who has used this methodology. Mot. at 10:16. **Not true.** Dr. Allenby testified, “[m]y response
 9 is this is standard methodology for analyzing data, and it’s present in every book on statistics.” Ex. 1
 10 at 143:16–18. Facebook also distorts Dr. Allenby’s testimony that “[t]his is not newsworthy for a
 11 journal.” *Id.* at 144:6–9. Dr. Allenby provided this testimony immediately after testifying that “it’s
 12 present in every book on statistics.” *Id.* at 143:16–18. The clear import of Dr. Allenby’s testimony is
 13 that a linear regression is so well-accepted that it would not be newsworthy to publish an article about
 14 linear regressions. And, as noted above, Facebook’s own expert, Dr. Reibstein, published an article
 15 two years ago acknowledging that linear regressions are appropriate for analyzing conjoint survey
 16 results. Ex. 6 at 45 n.140.

17 Facebook claims Dr. Allenby utilized a linear regression model because the logit model
 18 undermined Plaintiffs’ liability theory. Mot. at 5:2–10. **Not true.** Dr. Allenby repeatedly explained
 19 that he rejected the logit model due to lack of fit, not because the logit model failed to support
 20 Plaintiffs’ liability theory. *See* Ex. 1 at 261:23–262:7, 264:21–24, 272:1–8, 276:21–23, 278:1–3.

21 Facebook also curiously criticizes Dr. Allenby for not doing market research to evaluate the
 22 logit model. Mot. at 6:1–4. No market research was needed to determine that the logit model did not
 23 fit the data. Rather, Dr. Allenby’s analysis of the survey results found that survey respondents were
 24 not primarily trading off between Facebook and Google in changing their budget allocations. Ex. 3 at
 25 3; *see also* Ex. 1 at 293:9–21. Based on these survey results, Dr. Allenby found “that Facebook and
 26 Google are not close substitutes and their demand is relatively independent of each other.” Ex. 2 at 21;
 27 *see also* Ex. 13 at 3.

28 Facebook claims that “Dr. Allenby’s new conclusion that Facebook and Google are not close

1 advertising substitutes directly contradicts the design of his survey, which is premised on the
 2 assumption that they are direct substitutes.” Mot. at 5:21–23. **Again, not true.**⁶ Dr. Allenby testified
 3 to the exact opposite: the “survey does not assume that Facebook and Google are direct substitutes”
 4 and “[t]he survey questions do not assume that [Facebook and Google] are near perfect substitutes.”
 5 Ex. 1 at 324:7–14.

6 Facebook also adds a new contention that Allenby’s conjoint “violates nearly every rule he
 7 teaches his students” about conjoint. Mot. at 11:10–14. Facebook asserts in a single sentence that
 8 Allenby broke five of his own rules, yet Facebook fails to explain how Allenby supposedly broke these
 9 rules, or at most relegates its explanations to footnotes. *Id.* These new criticisms regarding Dr.
 10 Allenby’s “survey design” all go to weight, not admissibility. *See Fortune Dynamic, Inc.*, 618 F.3d at
 11 1038. These new criticisms are also meritless: Dr. Allenby (1) used a representative sample,⁷ (2) used
 12 the major product features in the survey, (3) described the product features in meaningful terms,⁸ (4)
 13 used a randomized experimental design,⁹ and (5) used the major set of brands in the survey.¹⁰

14
 15 ⁶ Facebook misleadingly cites testimony where Dr. Allenby stated that he initially believed
 16 Google and Facebook were direct substitutes when he drafted his survey. Ex. 1 at 316:11–18.
 17 However, Facebook fails to cite the key testimony where Dr. Allenby explains that the survey design
 does not assume (and thus is not premised on) Facebook and Google being direct substitutes. *Id.* at
 324:7–14.

18 ⁷ Dr. Allenby surveyed a random sample, and then conducted sensitivity analyses finding the
 19 sample is representative. Ex. 2 at 4, 22. This is Dr. Allenby’s standard approach when there are
 20 deviations “between [his] sample and the population of consumers.” Ex. 1 at 311:22–312:1. Dr.
 21 Reibstein has used the same approach. Ex. 5 at 72:18–73:10. Dr. Reibstein’s analysis of people
 22 spending less than \$1000 had insignificant results due to the sample size. Ex. 3 at 2. Attacking a
 23 survey’s sample population is a quintessential question of weight, not admissibility. *See e.g., Microsoft*
Corp. v. Motorola, Inc., 904 F. Supp. 2d 1109, 1120 (W.D. Wash. 2012); *On Site Energy Co. v. MTU*
Onsite Energy Corp., 2012 WL 2952424, at *3 (E.D.N.Y. July 19, 2012); *Hadley*, 324 F. Supp. 3d at
 1109. Facebook cites *Clicks Billiards, Inc.*, 251 F.3d at 1263, but that case never mentions survey
 samples; Facebook also cites *Kwan Software Engineering v. Foray Technologies, LLC*, 2014 WL
 572290, at *5 (N.D. Cal. Feb. 11, 2014), but that case, unlike here, survey participants were not even
 “potential purchasers of the products.”

24 ⁸ Facebook cites no evidence to support its assertion Dr. Allenby failed to use “major product
 25 features” or failed to describe them in “meaningful terms.” Allenby included major product features
 and described them in meaningful terms. Ex.1 at 68:16–69:2. This criticism of a conjoint goes to
 weight, not admissibility. *See Hadley*, 324 F. Supp. 3d at 1108–09 (collecting cases).

26 ⁹ Ex.1 at 68:22–23 (“I did use a randomized experiment.”) Facebook cites no evidence to support
 its assertion that Dr. Allenby failed to use a randomized experimental design.

27 ¹⁰ Facebook contends Dr. Allenby failed to include the “major set of brands” “in the survey.” Mot.
 28 at 7:2–5. Dr. Allenby correctly analyzed Facebook budget allocation data from the survey to measure
 Facebook budget allocations. *See Infra.* at 14. This does not change the fact Dr. Allenby included

1 In sum, Facebook engages in a wholesale mischaracterization of the facts to distract from
 2 binding precedent: “Challenges to survey methodology go to the weight given the survey, not its
 3 admissibility.” *Fortune Dynamic, Inc.*, 618 F.3d at 1036 (quoting *Wendt*, 125 F.3d at 814).

4 **B. Dr. Allenby Analyzed the Correct Survey Data by Focusing on Facebook Budget**
 5 **Allocations and Following Appropriate Procedures to Exclude Respondents**

6 Facebook also falsely accuses Dr. Allenby of “cherry-picking” the data set that he analyzed
 7 from his conjoint survey. Mot. at 12:1–14:2. The Court already found that this challenge “is a question
 8 of weight to be afforded to the opinion, not its admissibility.” Class Cert. Order at 13:25–28 (citing *In*
 9 *re Capacitors Antitrust Litig.*, No. 17-md-2801-JD, 2018 WL 5980139, at *6 (N.D. Cal. Nov. 14,
 10 2018)). Even if Facebook were accurately describing Dr. Allenby’s work – and it is not – its argument
 11 should be once again rejected. Criticisms regarding purported technical inadequacies in a survey go to
 12 weight, not admissibility. *See Fortune Dynamic, Inc.*, 618 F.3d at 1036; *Clicks Billiards, Inc. v.*
 13 *Sixshooters, Inc.*, 251 F.3d 1252, 1263 (9th Cir. 2001); *Wendt*, 125 F.3d at 814. Additionally, “[T]he
 14 quality of the data” used in a regression “do[es] not go to the admissibility of [the expert’s] opinions,
 15 but rather to matters of weight and probative value for a jury to evaluate.” *In re Capacitors Antitrust*
 16 *Litig. (No. III)*, 2018 WL 5980139, at *6 (N.D. Cal. Nov. 14, 2018) (Donato, J.); *accord Giuliano v.*
 17 *Sandisk Corp.*, 2015 WL 10890654, at *10 (N.D. Cal. May 14, 2015). Facebook’s criticisms are,
 18 therefore, misplaced.

19 Facebook’s arguments are also wrong on the facts. Facebook criticizes Dr. Allenby for
 20 excluding over “half of the data.” Mot. at 12:4–5, 13:6–15. However, Dr. Allenby utilized 100% of
 21 the data on advertisers’ Facebook budget allocations. And Dr. Allenby’s task was to determine the
 22 impact of Facebook’s misrepresentations on Facebook budget allocations. To achieve this,
 23 Dr. Allenby appropriately utilized all the data on advertisers’ Facebook budget allocations.
 24 Dr. Allenby’s task was not to measure what the impact of hypothetical Google misrepresentations on
 25 Google budget allocations. Thus, Dr. Reibstein’s supplemental analysis showing the effect of audience

26
 27 Google in the survey. In any event, this is a criticism regarding “survey design” and thus “go[es] to
 28 the weight of the survey rather than its admissibility.” *See Fortune Dynamic, Inc.*, 618 F.3d at 1038
 (quoting *Clicks Billiards, Inc.*, 251 F.3d at 1263).

1 size number changes on Google allocation data does not undermine Dr. Allenby's linear regression
2 for Facebook. Ex. 8, Reibstein Dep. Ex 295. Rather, Dr. Reibstein's analysis is entirely consistent with
3 Dr. Allenby's findings because "[i]t could be that people are evaluating Google differently in these
4 attributes, and the attribute coefficients could be different." Ex. 1 at 288:10–289:8. The Court already
5 accepted that Dr. Allenby's reasoning for this use of the data was sufficient for *Daubert* purposes.
6 Class Cert. Order at 13:25–14:2.

7 Facebook also incorrectly asserts that using the Facebook budget allocation data is problematic
8 because the allocations were based on a comparison with Google and elsewhere. Mot. at 13:11–15.
9 First, Dr. Allenby independently rotated the Facebook and Google attributes across the tasks in
10 accordance with statistical experimental design principles, Ex. 2 at 9; thus, Dr. Allenby can model
11 Facebook allocations independent of Google. Second, one of the results of the survey is that Facebook
12 and Google are not close substitutes, and thus advertisers are generally not comparing Facebook and
13 Google when making budget allocations. *Id.* at 21.

14 Facebook claims Dr. Allenby inappropriately excluded certain respondents by excluding
15 survey respondents who provided "straight-line" answers ("straight-liners"). Mot. at 7:15–8:4, 13:16–
16 14:2. But neither Facebook nor Dr. Reibstein dispute it is standard practice for straight-liners to be
17 excluded from conjoint survey results. Facebook complains Dr. Allenby did not follow the standard
18 definition of straight-liners. Mot. at 8:2–4. Dr. Allenby's exclusion of straight-liners, however, is
19 entirely consistent with how he defined straight-liners in a 2016 paper: respondents "who straight-line
20 their responses by giving the same response to each question." Ex. 9, Reibstein Rpt. ¶ 105
21 (acknowledging Dr. Allenby used this definition in a 2016 paper); *see also* Ex. 3 at 4. Debunking
22 Facebook's spurious allegation of cherry-picking, Dr. Allenby also confirmed that he never tested the
23 results with the straight-line respondents included. Ex. 1 at 408:1–6.

24 Facebook asserts Dr. Allenby incorrectly excluded 22 respondents using a model-based screen.
25 Mot. 8:5–7. Dr. Allenby applied a screen to remove some respondents based on their adjusted R
26 squared to "help ensure that respondents included in the analysis were paying attention and responding
27 to the product features in the allocation task." Ex. 3 at 4; Mot. at 8:5–7. This is a standard approach
28 for regression models. Ex. 15, Allenby Reply at 4; *see also* Ex. 1 at 410:18–411:10.

Facebook also argues Dr. Allenby improperly excluded survey participants who took the survey too quickly (“speeders”). Neither Facebook nor Dr. Reibstein dispute that it is standard practice for speeders to be excluded from conjoint survey results. Mot. at 8:7–11, 13:20–14:2. Dr. Allenby calculated speeders based on the reasonable criterion of completing the survey in less than half the median time, in this case 6.8 minutes. Ex. 2 at 16. Facebook’s claim that Allenby’s approach is “cherry-picking” rings completely hollow because Dr. Allenby determined the speeder threshold before knowing the results. Ex. 1 at 387:23–388:6.

IV. Dr. Allenby’s Opinion Is Relevant

Facebook does not dispute that Dr. Allenby’s opinion is relevant, nor could it. As in many other consumer class actions, Dr. Allenby’s opinion is relevant because it is an input to Plaintiffs’ damages model. *See e.g., Hadley*, 324 F. Supp. 3d at 1110; *Price*, 2018 WL 3869896, at *9; *In re Whirlpool Corp. Front-Loading Washer Prod. Liab. Litig.*, 45 F. Supp. 3d at 753–54.

CONCLUSION

For the foregoing reasons, the Court should deny Facebook’s motion in its entirety, just as it did previously.

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Respectfully submitted,

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